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# 20

# The United States of America



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*Therefore, this*

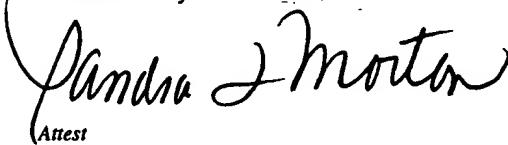
## United States Patent

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Bruce Lehman  
Commissioner of Patents and Trademarks

  
Sandra J. Morton  
Attest



US005683938A

# United States Patent [19]

Kim et al.

[11] Patent Number: 5,683,938  
[45] Date of Patent: Nov. 4, 1997

[54] **METHOD FOR FILLING CONTACT HOLES WITH METAL BY TWO-STEP DEPOSITION**

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[73] Assignee: Hyundai Electronics Industries Co., Ltd., Kyoung Ki-Do, Rep. of Korea

[21] Appl. No.: 327,887

[22] Filed: Oct. 24, 1994

**Related U.S. Application Data**

[63] Continuation of Ser. No. 964,362, Oct. 21, 1992, abandoned.

**Foreign Application Priority Data**

Oct. 21, 1991 [KR] Rep. of Korea 91-18500

[51] Int. Cl.<sup>6</sup> H01L 21/28

[52] U.S. Cl. 437/192; 437/195; 437/981

[58] Field of Search 437/192, 195, 437/189, 190, 981

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[57] **ABSTRACT**

Method for filling contact holes with metals by two-step deposition of selective tungsten layer is disclosed. The selective tungsten thin films are deposited in two steps, thus maximizing the contact filling with tungsten, gaining a stability of metal wires with better step coverage, and enhancing the reliability on semiconductor element.

5 Claims, 3 Drawing Sheets

